## CLAIMS

## What is claimed is:

10

15

- 1. An integrated circuit device comprising:
  - a) a plurality of signal lines disposed within a substrate;
  - a power grid disposed on said substrate and comprising: a plurality of power lines having a first thickness; and a plurality of ground lines having said first thickness, said power grid for supplying power and ground to circuitry of said substrate; and
  - c) a shield mesh disposed on said substrate and comprising of a plurality of power lines having a second thickness; and a plurality of ground lines having said second thickness, wherein respective signal lines of said plurality of signal lines are disposed between a respective power line of said shield mesh and a respective ground line of said shield mesh, said shield mesh for reducing the effects of electronic cross-talk between nearby signal lines of said plurality of signal lines.
  - 2. An integrated circuit as described in Claim 1 wherein said second thickness is less than said first thickness.
    - 3. An integrated circuit as described in Claim 2 wherein said signal lines of said plurality of signal lines are as thick as said second thickness.

- 4. An integrated circuit as described in Claim 1 wherein said power and ground lines of said shield mesh are alternatively disposed and parallel to each other within a single metal layer of said substrate.
- 5. An integrated circuit as described in Claim 3 wherein said power and ground lines of said shield mesh are aligned with substrate grid lines.
  - 6. An integrated circuit as described in Claim 1 wherein said power and ground lines of said shield mesh are alternatively disposed in a first direction parallel to each other within a first metal layer of said substrate and wherein said power and ground lines of said shield mesh are also alternatively disposed in a second direction parallel to each other within a second metal layer of said substrate, said second metal layer being underneath said first metal layer and wherein said first and second directions are 90 degrees apart.

15

- 7. An integrated circuit as described in Claim 1 wherein said electronic cross-talk comprises capacitive and inductive coupling.
- 8. An integrated circuit device comprising:
  - a) a plurality of signal lines disposed within a substrate;
  - b) a power grid disposed on said substrate and comprising: a plurality of first lines having a first thickness and for supplying a first voltage level; and a plurality of second lines having said first

thickness and for supplying a second voltage level, said power grid for supplying power to circuitry of said substrate;

c) a shield mesh disposed on said substrate and comprising: a plurality of third lines having a second thickness and for supplying said first voltage level; and a plurality of fourth lines having said second thickness and for supplying said second voltage level, wherein respective signal lines of said plurality of signal lines are disposed between a respective third line of said shield mesh and a respective fourth line of said shield mesh, said shield mesh for reducing the effects of electronic cross-talk between nearby signal lines of said plurality of signal lines.

5

10

15

- 9. An integrated circuit as described in Claim 8 wherein said second thickness is less than said first thickness.
- 10. An integrated circuit as described in Claim 9 wherein said signal lines of said plurality of signal lines are as thick as said second thickness.
- 11. An integrated circuit as described in Claim 8 wherein said third and fourth lines of said shield mesh are alternatively disposed and parallel to each other within a single metal layer of said substrate.
- 12. An integrated circuit as described in Claim 10 wherein said third and fourth lines of said shield mesh are aligned with substrate grid lines.

- 13. An integrated circuit as described in Claim 8 wherein said third and fourth lines of said shield mesh are alternatively disposed in a first direction parallel to each other within a first metal layer of said substrate and wherein said third and fourth lines of said shield mesh are also alternatively disposed in a second direction parallel to each other within a second metal layer of said substrate, said second metal layer being underneath said first metal layer and wherein said first and second directions are 90 degrees apart.
- 14. An integrated circuit as described in Claim 13 wherein third lines of said first metal layer and third lines of said second metal layer are coupled together using first connections.
  - 15. An integrated circuit as described in Claim 14 wherein fourth lines of said first metal layer and fourth lines of said second metal layer are coupled together using second connections.
  - 16. An integrated circuit as described in Claim 8 wherein said electronic cross-talk comprises capacitive and inductive coupling.
  - 17. An integrated circuit as described in Claim 8 wherein said shield mesh consumes substantially 50 percent of the available area of said substrate.
  - 18. An integrated circuit device comprising:

a) a plurality of signal lines disposed within a substrate;

5

10

- b) a power grid disposed on said substrate and comprising plurality of power lines having a first thickness; and a plurality of ground lines having said first thickness, said power grid for supplying power and ground to circuitry of said substrate; and
- c) a shield mesh disposed on said substrate and comprising plurality of first lines having a second thickness; and a plurality of second lines having said second thickness, wherein respective signal lines of said plurality of signal lines are disposed between a respective first line of said shield mesh and a respective second line of said shield mesh, said shield mesh for reducing the effects of electronic cross-talk between nearby signal lines of said plurality of signal lines.
- 19. An integrated circuit as described in Claim 18 wherein said first and second lines of said shield mesh are alternatively disposed and parallel to each other within a single metal layer of said substrate.
- 20. An integrated circuit as described in Claim 18 wherein said first and second lines of said shield mesh are alternatively disposed in a first direction parallel to each other within a first metal layer of said substrate and wherein said first and second lines of said shield mesh are also alternatively disposed in a second direction parallel to each other within a second metal layer of said

substrate, said second metal layer being underneath said first metal layer and wherein said first and second directions are 90 degrees apart.